7 WTC

FUEL TANKS

APPROVALS AND INSPECTIONS

TABLE OF CONTENTS

	Page
• Summary of Fuel Tank Installations and Code Compliance	1
• NYC Building Code	2-3
• NYC Fire Department Rules	4-5
• A/E of Records Letter to PA	6-7
• PA Risk Management Memo on Fire Department Review	8
• "Inergen" Fire Protection System for Mayor's OEM Tank at Ground Floor	9
• Summary of Inspections and Permits	13
• Permits and Inspections for Mayor's Office Of Emergency Management	14-23
• Permits and Inspections for US Secret Service	24-29
• Inspections for American Express	30-33

7 WTC - SUMMARY OF FUEL TANK INSTALLATIONS AND CODE COMPLIANCE

Tanks Inside the Building:

Underground:	Silverstein Base Building Tanks	2- 12,000 gals.
	Salomon Brothers Tanks	2- 6,000 gals (As per draft FEMA Report, dated 3/18/02)
Ground Floor:	Mayor's OEM	6,000 gals Within four hour rated construction and equipped with "Inergen" fire suppression system"

Upper Floors:

5	Silverstein	1 - 275 gals Day tank
7	Mayor's OEM	1 - 275 gals "
8	American Express	1 - 275 gals "
9	US Secret Service	Only a 50 gals. self contained tank mounted on the engine

Code Permitted Storage Inside Buildings: (See attached pages from the code and Fire Department Rules)

NYC Building Code :

Underground:

- Up to 20,000 gals. each tank
- No specific limitation on number of tanks

Above ground:

-On the lowest floor

- Up to 20,000 gals., when installed within 3-hr. rated enclosure
- No specific limitation on number of tanks

-On upper floors

- Up to 275 gals., with proper containment for twice the capacity of the tank. Containment can be provided by concrete curb or metal pan .
- Not more than one per story.

NYC Fire Department:

- Same provisions

All tank installations are code compliant and conform to the Fire Department regulations.

NYC BLDG CODE

(3) Minimum rivet diameter in seams shall be 5/8 in., and rivets shall be spaced not more than 1 1/4 in. center-to-center.

(4) All flat surfaces of rectangular tanks shall be braced by structural members or rods.

(5) When structural members are used, the rivet pitch shall not exceed six inches.

(6) All structural members shall be designed in accordance with the requirements of subchapter ten of this chapter.

(7) Connections between bracing members and the sides of the tank shall be designed so that the connection will not fail before the member will fail.

(d) All tanks except vertical tanks above ground, two hundred seventy-five gallon or less capacity.

(1)* All oil storage tanks of two hundred seventy-five gallon capacity or less that are not buried shall have a minimum thickness of shell and head plates of no. 10 manufacturer's standard gauge steel plate. Storage tanks of sixty gallon capacity or less shall be similarly constructed but need not be thicker than No. 14 manufacturer's standard gauge.

(e) Vertical storage tanks over one thousand gallon capacity located outside of building above ground.

(1) Vertical tanks located outside of buildings above ground shall be built of steel plates of the quality required for cylindrical tanks.

(2) The minimum thickness of shell or bottom plates shall be one quarter of an inch, and the minimum thickness of roof plates one-eighth of an inch. The thickness of shell plates shall be determined in accordance with the following formula:

$$t = \frac{P \times R \times F}{T \times E}$$

where

t = thickness of shell plate in in.
P = head pressure at bottom of ring under consideration in psi.
R = radius of shell, in in.
F = factor of safety (taken as 5).
T = tensile strength of plate, in psi as verified by mill test certificate.
E = efficiency of vertical joint in ring under consideration. E shall in no case be taken greater than 1.00.

(3) Roof plates shall have single lap-riveted or welded watertight seams, and the roof shall be built to shed water. Bottom plates shall have single lap riveted or welded seams. Shell plate seams shall be designed to develop the full strength of the plate.

(f) Storage containers of six gallons or less.

(1) Oil storage containers used with burners or oil burning heaters and having a capacity of six gallons or less used in connection with burners or oil-burning heaters shall be designed so as to withstand a hydrostatic pressure test of at least five psi without permanent deformation, rupture, or leakage, and shall be approved.

(2) All storage containers used with burners or oil burning heaters shall be installed with rigid metal fasteners for wall, floor, or stand type installations, and shall be protected against mechanical damage.

(3) Portable containers may be filled by a pump mounted on a storage tank, provided that the pump is approved.

§ [redacted]. (a) Inside of buildings, above ground, on the lowest floor.

(1) TANK CAPACITY OF FIVE HUNDRED FIFTY GALLONS OR LESS. Storage tanks having a capacity of five hundred fifty gallons or less may be installed above ground on the lowest floor of a building, provided that such tanks are mounted on adequate noncombustible supports, with the tank anchored thereto. No more than five hundred fifty gallons of total storage capacity may be connected to one burner or may be installed without the protection provided in paragraph two or three of this subdivision.

(2) TANK CAPACITY MORE THAN FIVE HUNDRED FIFTY GALLONS BUT LESS THAN ELEVEN HUNDRED GALLONS. Storage tanks having a capacity of more than five hundred fifty gallons but less than eleven hundred gallons may be installed above ground on the lowest floor of a building, provided that all portions of such tanks above the floor are completely enclosed with noncombustible construction having at least a two hour fire resistance rating. Weep holes one inch in diameter shall be provided at least every three feet along the bottom of the enclosure unless at least fifteen inches of clearance, together with access door, is provided between the tank and the enclosure.

(3) TANK CAPACITY ELEVEN HUNDRED GALLONS OR MORE. Storage tanks having a capacity of eleven hundred gallons or more may be installed above ground on the lowest floor of a building, provided that all portions of such tanks above the floor are completely enclosed with noncombustible construction having at least a three hour resistance rating. At least fifteen inches clearance shall be provided over the tanks and on all sides between the tanks and the enclosure. A noncombustible access door, constructed so as to preserve the integrity of the fire resistive enclosure, shall be installed in the enclosure above the point where the capacity of the enclosure below the door sill would be equal to the capacity of the largest tank installed. When the longest inside dimension of the enclosure exceeds thirty-five feet, access doors shall be installed at intervals not exceeding twelve feet. Columns, pipes, or similar obstructions may project into the required fifteen inches of space within the enclosure, provided that access door or doors are so arranged that all portions of the enclosure are accessible for servicing.

(4) MAXIMUM TANK SIZE. The capacity of individual storage tanks in no case shall exceed twenty thousand gallons.

(b) Inside of building above the lowest floor.

(1) Fuel oil storage tanks having a capacity of two hundred seventy-five gallons or less may be installed inside of buildings above the lowest story when provided with a four inch thick concrete or masonry curb, or with a metal pan of gauge equal to the gauge of the tank, completely surrounding the tank and of sufficient height to contain two times the capacity of the tank. The number of such oil storage tanks shall be limited to one per story.

(2) Storage tanks having a capacity of two hundred seventy-five gallons or less, installed above the lowest floor inside a building shall be filled by means of a transfer pump supplied from a primary storage tank located and installed as otherwise required by this subchapter. A separate transfer pump and piping circuit shall be provided for each storage tank installed above the lowest floor. No intermediate pumping stations shall be provided between the storage tank and the transfer pump. Appropriate devices shall be provided for the automatic and manual starting and stopping of the transfer pumps so as to prevent the overflow of oil from these storage tanks.

(3) A float switch shall be provided with the curb or pan around the storage tank and shall be arranged so as to sound an alarm and stop the transfer pump in case of failure of the tank or the control in the tank. The operation of the float switch shall be tested at least once each week. An alarm bell shall be located in the same room with the tank and a visual and audible alarm shall be located in a maintenance office. The enclosing and sealing of switches and wiring shall conform to the requirements of the electrical code of the city of New York for devices located in an atmosphere of flammable vapors.

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*So in original. No par. (2) has been enacted.

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NYC BLDG CODE

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(c) ... of buildings, below ground.

(1) ...rage tanks having a capacity greater than two hundred seventy-five gallons may be buried inside a building provided that the top of the tank is at least two feet below floor level. In lieu of two feet of earth over the tank, the tank may be covered by concrete flooring having the same thickness as the basement floor, but not less than four inch concrete meeting the requirement of subchapter ten of this chapter and reinforced with two inch by two inch mesh of at least no. 20 U.S. standard gauge steel wire. Tanks shall be placed in firm soil and shall be surrounded by clean sand or well-tamped earth, free from ashes and other corrosive substances, and free from stones that will not pass through a one inch mesh. When necessary to prevent floating, tanks shall be securely anchored.

(2) No tank shall be buried within three feet of any foundation wall or footing.

(d) Outside of building, below ground.

(1) Storage tanks located outside of buildings and below ground shall be buried with the top of the tank at least two feet below ground. Tanks shall be placed in firm soil and shall be surrounded by clean sand or well-tamped earth, free from ashes or other corrosive substance, and free from stones that will not pass through a one inch mesh. *When necessary to prevent floating, tanks shall be securely anchored.*

(2) No tank shall be buried within three feet of any foundation wall or footing.

(e) Outside of buildings, above ground.

(1) Storage tanks of a capacity greater than two hundred seventy-five gallons located outside of buildings above ground shall be not less than one and one-quarter (11/4) tank diameters and in no case less than ten feet. from the line of adjoining property, the nearest building or adjacent tank. The minimum clearance between individual tanks located outside of buildings above ground and the line of adjoining property which may be built upon shall be fixed by the following formula:

$$M.C. = 10 + 4\left(\frac{G-275}{5000}\right)$$

where:

M.C. = minimum clearance from nearest surface of tank to adjoining property, in ft.

G = capacity of tank, in gal.

The maximum allowable capacity of fuel oil storage tanks located outside of buildings above ground shall be one hundred thousand gallons.

(2) Tanks shall be located so as not to obstruct or interfere with any means of egress.

(3) Each storage tank shall be protected by an embankment or dike. Such protection shall have a capacity at least one and one-half times the capacity of the tank so surrounded and shall be at least four feet high, but in no case shall the protection be higher than one-quarter the height of the tank when the height of the tank exceeds sixteen feet. Embankments or dikes shall be made of earth work with clay core, of masonry, of reinforced concrete or of steel. Earth work embankments shall be firmly and compactly built of good earth free from stones, vegetable matter, etc., and shall have a flat section of at least three feet at the top and a slope of at least one and one-half to two on all sides. Concrete, masonry or steel dikes shall be designed so as to conform safely all of the oil in the tank so surrounded. Embankments or dikes shall be continuous and unpierced, and the outside toe shall be located at least five feet inside of the property line, and no less than five feet from a driveway or parking area.

(f) Tanks located along line of subways.

(1) No buried tank shall be placed within twenty feet of the outside line of a subway wall. Where an above ground tank within a building is located within the outer lines of the subway, or within twenty feet of the outside line of the subway wall, such tank shall be placed within a welded steel oiltight pan of not less than no. 18 manufacturer's standard gauge metal suitably reinforced and of capacity ... in the contents of the tank.

(2) For the purpose of the foregoing requirement, a subway shall be deemed to include any subsurface railroad or rapid transit roadbed.

§ 27-830 *(C26-1416.4)* **Piping.** (a) Installation of piping and tubing.

(1) Exposed piping shall be protected against mechanical damage and shall be adequately supported with rigid metal fasteners or hangers. All pipes connected to buried tanks, except test well piping, shall be provided with double swing joints at the tank.

(2) Only new wrought iron, steel, or brass pipe, or type K or heavier copper tubing, or aluminum alloy tubing, properly identified, may be used. Metal tubing when used for conveying oil shall be adequately protected. Such tubing may be installed at the burner without protection. Drawn tubing when used in domestic installations shall be of at least 3/8 in. inside diameter up to the shut-off valve at the burner. Soldered connections shall be prohibited.

(3) Overflow pipes, where installed, shall not be smaller in size than the supply pipe.

(b) Relief valves.

(1) Where a shut-off valve is installed in the discharge line from an oil pump, a relief valve shall be installed in the discharge line between the pump and the first shut-off valve.

(2) A relief or pressure regulating valve shall be provided in the oil piping system on the heater side of the shut-off valves.

(3) Relief valves shall be set to discharge at not more than one and one-half times the maximum working pressure of the system. The discharge from relief valves shall be returned to the storage tank or to the supply line. There shall be no shut-off valve in the line of relief.

(c) Fuel oil heaters. Fuel oil heaters shall not be installed within the steam or water space of a boiler. Fuel oil heaters and the connecting piping shall be arranged to prevent oil leakage from being transmitted to the boiler. This may be accomplished by any of the following methods:

(1) By discarding the condensate from the heaters.

(2) By using approved double tube or other approved heaters.

(3) By means of a secondary hot water or steam heating system where the water or steam from the boiler has no direct contact with the oil heater.

(4) By a sight tank arrangement for collecting and inspecting the condensate which is provided with a pump controlled by a hand switch for returning the condensate to the normal return system.

(5) By such other method as may be permitted by the commissioner.

(d) Vent pipe.

(1) A vent pipe of iron or steel, without trap, draining to the tank, shall be provided for each storage tank. The lower end of the vent pipe shall not extend more than one inch through the top of the storage tank. Cross-connection between a vent pipe and fill pipe is prohibited.

(2) Where a battery of storage tanks designed to hold the same grade of oil is installed, vent pipes may be run into a main header.

(3) Vents shall be at least one and one-quarter inches in diameter for storage tanks not exceeding eleven hundred gallons capacity and at least two inches in diameter for storage tanks of eleven hundred gallons or more except that vents for storage tanks of sixty gallon capacity or less shall be at least one-half inch in diameter. Vents for tanks inside of buildings above the lowest floor shall be run into the primary storage tank vent.

(4) Vent pipes shall be provided with an approved weatherproof hood having a free area of at least the pipe size area. Vent pipes shall terminate outside the building in a nonhazardous location, at least two feet from any building opening and not less than two feet nor more than twelve feet above the fill pipe terminal, unless otherwise permitted by the commissioner. If the vent pipe terminal is not visible from the fill pipe terminal location, a one inch tell-tale line shall be connected to the tank and

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(vii) [illegible]ctions between bracing members and the sides of the tank shall be a[illegible]ed so that the connections will not fail before the member will fail.

(4) *All tanks except vertical tanks above ground 275 gallons or less capacity.* All storage tanks of 275-gallon capacity or less that are not buried shall have a minimum thickness of shell and head plated of number 10 manufacturer's standard gauge steel plate. Storage tanks of 60-gallon capacity or less shall be similarly constructed but need not be thicker than No. 14 manufacturer's standard gauge.

(5) *Vertical storage tanks over 1,000-gallon capacity located outside of building above ground.*

(i) Vertical tanks located outside of buildings above ground shall be built of steel plates of the quality required for cylindrical tanks.

(ii) The minimum thickness of roof plates shall be ⅛-inch. The thickness of shell plates shall be determined in accordance with the following formula:

$$t = \frac{TE}{PRF}$$

Where: t=thickness of shell plate in inches

P=head pressure at bottom of ring under consideration in p.s.i.

R=radius of shell, in inches

F=factor of safety (taken as 5)

T=tensile strength of plate, in p.s.i. as verified by mill test certificate

E=efficiency of vertical joint in pipe under consideration

E. shall in no case be taken greater than 1.00.

Roof plates shall have single lap-riveted or welded water-tight seams, and the roof shall be built to shed water. Bottom plates shall have single lap riveted or welded seams. Shell plate seams shall be designed to develop the full strength of the plate.

[illegible] Inside of building, above ground on the lowest floor.

(i) *Tank Capacity of 550 gallons or less.* Storage tanks having a capacity of 550 gallons or less may be installed above ground on the lowest floor of a building, provided that such tanks are mounted on adequate noncombustible supports, with the tank anchored thereto. No more than 550 gallons of total storage capacity may be installed without protection provided in subparagraph (ii) or (iii) below.

(ii) *Tank capacity more than 550 gallons but less than 1,1[illegible]ons.* Storage tanks having a capacity of more than 550 gallons but less than 1,100 gallons may be installed above ground on the lowest floor of a building, provided that all portions of such tanks above the floor are completely enclosed with noncombustible construction having at least a 2-hour fire resistance rating. Weep holes 1-inch in diameter shall be provided at least every 3 feet along the bottom of the enclosure unless at least 15 inches of clearance, together with access door, is provided between the tank and the enclosure.

(iii) *Tank capacity 1,100 gallons or more.* Storage tanks having a capacity of 1,100 gallons or more may be installed above ground on the lowest floor of a building, provided that all portions of such tanks above the floor are completely enclosed with non-combustible construction having at least a 3-hour resistance rating. At least 15-inch clearance shall be provided over the tanks and on all sides between the tanks and the enclosure. A noncombustible access door, constructed so as to preserve the integrity of the fire resistive enclosure, shall be installed in the enclosure above the point where the capacity of the enclosure below the door sill would be equal to the capacity of the largest tank installed. When the longest inside dimension of the enclosure exceeds 35 feet, access doors shall be installed at intervals not exceeding 12 feet. Columns, pipes, or similar obstructions may project into the required 15 inches of space within the enclosure, provided that access door or doors are so arranged that all portions of the enclosure are accessible for servicing.

(iv) *Maximum tank size.* The capacity of individual storage tanks in no case shall exceed 20,000 gallons.

(2) *Inside of buildings, below ground.*

(i) Storage tanks having a capacity greater than 275 gallons may be buried inside of a building provided that the top of the tank is at least 2 feet below floor level. In lieu of 2 feet of earth over the tank, the tank may be covered by concrete flooring having the same thickness as the basement floor, but not less than 4 inches concrete meeting the requirements of Subchapter 10 of Chapter 1 of Title 27 of the Administrative Code and reinforced with 2-inch by 2-inch mesh of at least No. 20 U. S. Standard Gauge Steel Wire. Tanks shall be placed in firm soil and shall be surrounded by clean sand or well-tamped earth, free from ashes and other corrosive substances, and free from stones that will not pass through a 1-inch mesh. When necessary to prevent floating, tanks shall be securely anchored.

(ii) No tank shall be buried within 3 feet of any foundation wall or footing.

FILES

(3) *Outside building, below ground.*

(i) Storage tanks located outside of buildings and below ground, shall be buried with the top of the tank at least 2 feet below ground. Tanks shall be placed in firm soil and shall be surrounded by clean sand or well tamped earth, free from ashes or other corrosive substances, and free from stones that will not pass a 1-inch mesh. When necessary to prevent floating, tanks shall be securely anchored.

(ii) No tank shall be buried within 3 feet of any foundation wall or footing.

(4) *Outside building, above ground.*

(i) Storage tanks of a capacity greater than 275 gallons located outside of buildings above ground shall be not less than one and one-quarter (1¼) tank diameters and in no case less than 10 feet from the line of adjoining property, the nearest building or adjacent tank. The minimum clearance between individual tanks located outside of buildings above ground and the line of adjoining property which may be built upon shall be fixed by the following formula:

$$M.C. = 10 + 4\frac{G\ 275}{5000}$$

Where: M.C. = minimum clearance from nearest surface of tank to adjoining property in feet.

G = capacity of tank, in gallons.

The maximum allowable capacity of tanks for storage of liquids or solvents having a flashpoint of 100 degrees Fahrenheit or higher located outside of building above ground shall be 100,000 gallons.

(ii) Tanks shall be located so as not to obstruct or interfere with any means of egress.

(iii) Each storage tank shall be protected by an embankment or dike. Such protection shall have a capacity at least 1½ times the capacity of the tank so surrounded and shall be at least 4 feet high, but in no case shall the protection be higher than ¼ the height of the tank when the height of the tank exceeds 16 feet. Embankments or dikes shall be made of earth work with clay core, of masonry, or reinforced concrete or of steel.

Earth work embankments shall be firmly and compactly built of good earth free from stones, vegetable matter, etc., and shall have a flat section of at least 3 feet at the top and slope of at least 1½ to 2 feet on all sides. Concrete, masonry or steel dikes shall be designed so as to confine safely all of the oil in the tank so surrounded. Embankments or dikes shall be continuous and unpierced, and the outside toe shall be located at least 5 feet inside of the property line, and no less than 5 feet from a driveway or parking area.

SWANKE HAYDEN CONNELL ARCHITECTS

Recd 3/24/98

295 Lafayette Street, New York, New York 10012
212 226 9696, Fax 212 219 0059

March 20, 1998

THE PORT AUTHORITY OF NY & NJ
QUALITY ASSURANCE DIV.
ENGINEERING DEPT.
MAR 24 1998
RECEIVED
NOTED:
REFERRED TO: Dave Winner
D. Lowy.

Mr. Jeffrey Gertler
Project Manager
Port Authority of New York
1 World Trade Center
New York, New York 10048

Re: Mayor's Office of Emergency Management
7 World Trade Center-23rd Floor
New York, New York
SHCA Project No. 5576A
TAA No. 987134
"Conceptual Review-Submission : Fuel Oil Room"

Dear Mr. Gertler:

We would like to take the opportunity to thank you and the other Port Authority staff members present for taking the time to meet with us on Thursday March 19, 1998. The review of your comments in connection to the above referenced submission was helpful. Per our meeting, the following is the additional information requested to clarify the design intent and code issues related to the fuel oil tank design:

The Section 27-829(a)(3) of the NYC Building Code states "TANK CAPACITY ELEVEL HUNDRED GALLONS OR MORE.-Storage tanks having a capacity of eleven hundred gallons or more may be installed above ground on the lowest floor of the building, provided that all portions of such tanks above the floor are completely enclosed with noncombustible construction having at least a three hour resistance rating. ...."

Per the conceptual drawing A-1- submission, the lowest floor of 7 World Trade Center is the Ground Floor. This building does not have a cellar or basement. The next floor above Ground is the identified as the 3rd Floor. There are no elevator stops or fire stair access doors between the Ground & 3rd Floors making the Ground Floor and this room a double height space (floor-to-floor height of 25'-3"). The 6,000 gallon fuel oil tank shall be located in a room adjacent to the Ground Floor Lobby on Vesey Street which currently houses a televator utilized to maintain the Lobby lighting. The fuel oil tank shall be enclosed with noncombustible construction having at least a three hour resistance rating as required by Code. As submitted, we propose to support the tank above the floor within this room and to build a platform with walls and curbs to retain fuel oil in the event of leakage. We shall conform to all applicable provisions of the NYC Building Code: Subchapter 14, Article 17-Fuel Oil Equipment.

As discussed, we shall confirm the type of fuel oil to be stored and its minimum flashpoint temperature to determine whether the room needs to be classified as Occupancy Group A-High Hazard. We shall conform to the applicable provisions of the Code based upon the occupancy classification determined for the type of fuel oil to be stored. As discussed, Silverstein Properties, Inc. will continue to house the televator in this location. Currently, the televator is a Genie Boom Model No. Z-45-22 which is battery operated and occupies most of this room. We propose that this Genie storage area be classified as Occupancy Group B-2-Storage (low hazard) and we shall provide a fire separation or fire division between uses in the room in accordance to the Code requirements.

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MAR-24 98 12:54 FROM:SHCA LTD TO:9435816? PAGE:02/03

Mr. Jeffrey Gertler
Port Authority of New York
Mayor's Office of Emergency Management
7 World Trade Center
SHCA Project No. 5576A
TAA No. 987134
March 20, 1998

Again, we thank you for your time and assistance. We look forward to working with you to bring about a successful project for the Mayor's Office of Emergency Management. Should you have any questions or comments, please call.

Sincerely,

SWANKE HAYDEN CONNELL ARCHITECTS

Joseph J. Aliotta

Joseph J. Aliotta 219-6716
Associate Principal

cc: C. Chu-Silverstein Properties
W. Weems-Silverstein Properties
C. Rizzo-Rizzo & Associates

Discussed w/ D. Warren + D. Lucy on 3/26/98

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MAR-24 98 12:55 FROM:SHCA LTD TO:94358168 PAGE:03/03

14

THE PORT AUTHORITY OF NY & NJ **MEMORANDUM**

TO: File
FROM: Gerard M. Cummiskey
DATE: April 27, 1998
SUBJECT: FDNY REVIEW -- WTC7 DIESEL TANK

COPY: S. Bhol, N. Chanfrau, J. Gertler, E. Petrick, D. Warren

On April 23, 1998 and April 27, 1998, I spoke with the Fire Department - City of New York, Director of Engineering, James Hansen, regarding the proposed installation of a 6,000 gallon diesel fuel tank at WTC7. This tank will supply fuel for the emergency power generators supporting the City's Office of Emergency Management Complex.

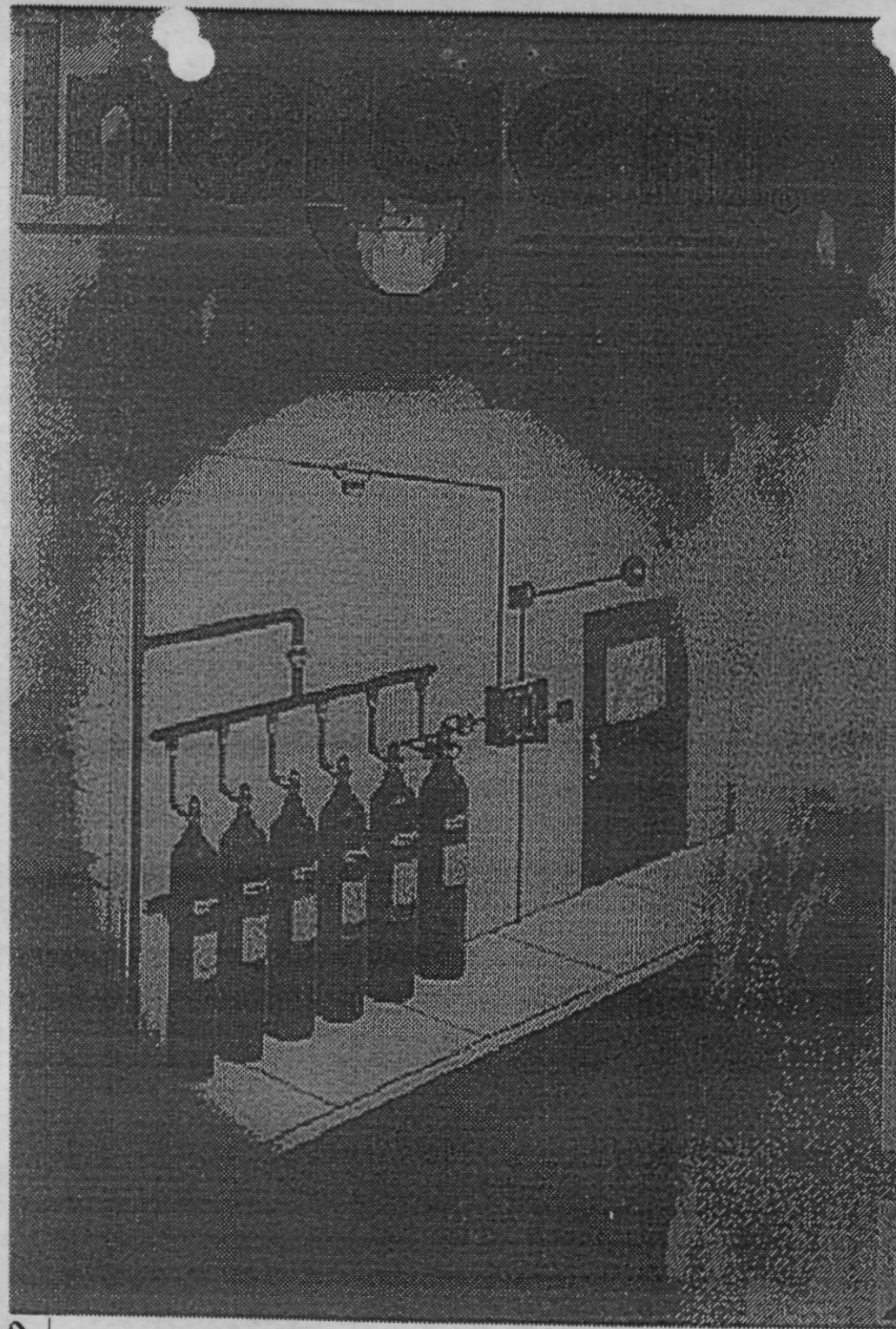
Mr. Hansen's only comment was to recommend the installation of an appropriate fire suppression system in the area of the fuel tank.

G. Cummiskey

Gerard M. Cummiskey
Manager, Risk Control Division
Risk Management

cc: D. Lucey
Fdb Folder

TOTAL P.02



7. Testing and Placing in Service

Testing Pull Station

Testing Electric Detection System - AUTOPULSE Control System

Testing Electric Detection System - ANSUL AUTOMAN II-C Release

Testing Selector Valve

Discharge Test

Table of Contents

Main Menu

USED FOR 7 WTC Major OEM Fire Suppression Systems

To test a remote electric pull station, refer to appropriate AUTOPULSE Control System installation, operation, and maintenance manual.

To test a remote cable pull station to ANSUL AUTOMAN II-C release, complete the following steps:

⚠ CAUTION

When testing pull station, make certain cartridge is not installed in ANSUL AUTOMAN II-C release. Failure to remove cartridge will cause system actuation. Make certain shipping cap is installed on cartridge.

1. With the gas cartridge removed, remove ring pin from release puncture pin assembly.
2. If required, remove glass break rod from pull station by removing set screw on side of stud and slide glass break rod out.
3. Pull handle on pull station. If the release assembly is tripped easily, the remote cable pull station is properly installed.

   If the release assembly does not trip easily, remove pulley tee (if provided) and each pulley elbow cover to make certain wire rope is resting on the pulley sheave. If this does not correct the problem, there is too much slack in the cable and it must be retightened.
4. If retightening or realignment was necessary, retry pull station. If release assembly operates properly, cut off any excess wire rope 3/4 in. (2 cm) above oval sleeve.
5. Recock release assembly using cocking lever, Part No. 26310, and reinstall ring pin.
6. Slide glass break rod through stud and ring handle. Tighten set screw into stud.
7. If no other testing is required, re-install nitrogen cartridge in ANSUL AUTOMAN II-C Release.

To test a remote cable pull station to cylinder lever release(s), complete the following steps:

⚠ CAUTION

Make certain lever actuator(s) are removed from cylinder valves prior to testing pull station. Failure to do so will cause cylinder discharge.

1. Remove lever actuator(s) from cylinder valve.

NOTICE

After removing actuator(s) from cylinder valve, securely support actuator(s) in order for it to operate when pull station is pulled.

2. Pull remote cable pull station. Lever actuator should move to the tripped position.

   If lever actuator does not trip, remove each pulley elbow cover to make certain wire rope is resting on the pulley sheave. If this does not correct the problem, there is too much slack in the cable and it must be retightened.
3. If retightening or realignment was necessary, retry pull station.
4. If pull station operated properly, reset lever actuator.

⚠ CAUTION

Make certain lever actuator is in the "SET" position before reinstalling on cylinder valve. Failure to do so will cause actuation when reinstalling.

5. Reinstall lever actuator on cylinder valve. Wrench tighten.

▸ TESTING CV-90 VALVE ELECTRIC DETECTION/ACTUATION SYSTEM – AUTOPULSE CONTROL SYSTEM

⚠ CAUTION

Electric Actuator, Part No. 73111, must not be installed on INERGEN cylinder valve during test. If installed, testing of the electric detection system will cause actuation and discharge of the fire suppression system.

In order to properly test the electric detection and actuation system, refer to the appropriate AUTOPULSE control system installation, operation, and maintenance manual.

When solenoid is tested off the cylinder valve, an audible "click" in the solenoid valve will be heard when the circuit is energized. This will confirm the solenoid is operating.

TESTING CV-98 ELECTRIC DETECTION/ACTUATION SYSTEM – AUTOPULSE CONTROL SYSTEM

⚠ CAUTION

Electric Actuator, Part No. 423684, must not be installed on INERGEN cylinder valve during test. If installed, testing of the electric detection system will cause actuation and discharge of the fire suppression system.

In order to properly test the electric detection and actuation system, refer to the appropriate AUTOPULSE control system installation, operation, and maintenance manual and the CV-98 Electric Actuation Application and Installation Sheet, Part No. 426003.

When CV-98 electric actuator is actuated correctly, the piston in the bottom of the actuator will be locked in the down position. It will be locked in that position by the internal discharged METRON PROTRACTOR. The METRON PROTRACTOR must be replaced before re-installing actuator to valve. See Recharge Section for replacement instructions.

TESTING ELECTRIC DETECTION SYSTEM – ANSUL AUTOMAN II-C RELEASE

When utilizing an ANSUL AUTOMAN II-C release for electric detection or in combination with an AUTOPULSE Control System, refer to ANSUL AUTOMAN II-C Releasing Device Installation, Operation, and Maintenance Manual, Part No. 17788, or for explosion-proof version, Part No. 31496, for detailed information.

TESTING SELECTOR VALVE

When utilizing selector valves in the distribution piping network, make certain all selector valve actuators are in the "SET" position. To do this, pull the knurled reset knob on the side of the valve actuator. This will cause the actuator to reset to the proper operating position. The knob will lock in the "OUT" position.

DISCHARGE TEST

The authority having jurisdiction may require an INERGEN system discharge test. In preparing for a discharge test, the following guidelines may help:

1. Perform a complete maintenance exam prior to performing the discharge test. This will confirm that the system will function properly.
2. Inform all personnel that a discharge test will be conducted. Everyone should be aware that various equipment will shut off or turn on. No one should be in the hazard area during the discharge.
3. If necessary, perform an enclosure integrity (door fan) test prior to running the INERGEN system discharge test. This will confirm that total venting area is not too great for the hazard to adequately contain the desired INERGEN agent concentration.
4. Set up the recording equipment outside of hazard area. Ansul recommends using the following equipment:
   - Nova Model 308 BWP portable oxygen and carbon dioxide analyzer
   - M-Tek Model 312 two pen, four in., multi-range, multi-speed chart recorder

   Ansul recommends that the oxygen and carbon dioxide concentrations be monitored from a single point within the protected space. The source for the monitoring point will be the hazard most likely considered the fire source. In the case of total room protection with multiple hazards, the monitoring point should be halfway up at the center of the room.
5. Actuate INERGEN system and monitor recording equipment. The following requirements must be adhered to:

   In order to meet the design concentration of 37.5% to 42.8%, the oxygen concentration reading must be between 13.1% – 12.0% and the carbon dioxide concentration reading must be between 2.5% – 4.5%. The oxygen concentration must not exceed 14.5% throughout the hold time determined by the AHJ. (Ansul recommends a minimum of 10 minutes). Reading should start one minute plus meter delay time from system actuation. Meter delay time, depending on length of tubing, could be as long as 30 to 60 seconds.
6. After concentration monitoring is complete, open doors and, if possible, windows, to completely air out hazard area.
7. Reset control panel and all auxiliary equipment. Make certain all equipment has returned to its normal operating status.
8. Remove all empty INERGEN agent cylinders and install full ones. Attach all actuators. **NOTE:** CV-98 electric actuators require replacing the METRON PROTRACTOR after discharge. See Section VIII, Resetting and Recharge.

DISCHARGE TEST (Continued)

9. Remove all empty INERGEN agent cylinders from the area. Deliver the empty cylinders to an authorized INERGEN Agent Fill Location.

NOTICE

In order to maintain Factory Mutual Research Corporation Approval, only factory filled cylinders are to be used.

10. Record discharge test information with the authority having jurisdiction and inform all concerned personnel that the system is now back in normal working order.

SUMMARY OF INSPECTIONS AND PERMITS

Mayor's Office of Emergency Management – 7WTC, W-987134 :

Reports/Certifications	Date	Page No.
• Permit to occupy or Use	April 30, 2001	14
• Audit Report by WTC Manager of Construction	April 12, 2001	15
• A/E of Record's Certification	Feb. 28, 2001	16
• Fire Protection Systems Report by Risk Management	March 27, 2001	17
• Inspection Punch List completed on March 12, 2001	Sept. 14, 1999	18
• Controlled Inspection for Tank Pressure Test by A/E of Record	April 4, 2001	20
• Controlled Inspection Report for Fire Stopping by A/E of Record	April 4, 2001	21
• Confirmation for completion of Inergen system by Licensed Professional	April 4, 2001	22
• Confirmation for completion of Fuel Oil Storage Tank by Licensed Professional	April 4, 2001	23

U.S Secret Service – 7WTC – 9th and 10th Floors – General Construction:

Reports/Certifications	Date	Page No.
• Permit to occupy or Use	Dec. 16, 1996	24
• Audit Report by WTC Manager of Construction	Nov. 25, 1996	25
• A/E of Record's Certification	Jan. 23, 1995	27
• Fire Protection Systems Report by Risk Management	Dec. 2, 1996	28
• Inspection Punch List completed on March 17, 1995	Dec. 29, 1994	29

American Express – 7WTC – 7th and 8th Floors – Office Construction:

Reports/Certifications	Date	Page No.
• Denied Permit to occupy or Use	Jan. 16, 1996	30
• Outstanding Open items by WTC Supervising Engineer	Sep. 27, 1995	31
• Audit Report by WTC Manager of Construction	Sep. 1, 1995	32
• A/E of Record's Certification	Jan. 28, 1994	33

The following tenant construction projects predate the Permit Requirement by The Engineering Department:

- Silverstein Base Building TAA No. W-01437
- Salomon TAA No. W-7004

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY
OFFICE OF THE CHIEF ENGINEER
ONE WORLD TRADE CENTER
NEW YORK, N.Y. 10048

TO: A. Reiss, Director, World Trade Department, WTC

PERMIT TO OCCUPY OR USE
OF
TAA W-987134
Mayor's Office Of Emergency Management
7 WTC, 1st, 7th, 23rd Floors and Roof

Based upon the Report on Audit Conformance issued by F. DeMartini, Manager, WTC Construction & Tenant Project Management, under date of April 12, 2001, which states that the work performed by Ambassador Construction Co. for Mayor's Office Of Emergency Management – 7 WTC, 1st, 7th, 23rd Floors and Roof at The World Trade Center has been substantially completed, in accordance with the approved Drawings and Specifications and requirements of the Port Authority, so as to permit occupancy or use on April 30, 2001, and the fact that audit of field construction and/or field records made by the Engineering Department during the progress of work under TAA W-987134 have not, to the best of my knowledge and belief, disclosed any evidence that the requirements of the approved Drawings and Specifications and requirements of the Port Authority have not been met, I hereby issue a Permit to Occupy or Use.

John T. Spencer
for Francis J. Lombardi, P.E.
Chief Engineer

Dated: April 30, 2001
New York, N.Y.

cc: Abu-Ghallous, Curci, DeCosta, DeMartini, Fadavi, Gaeta, Gertler, Ginex, Hanna, Kozel, Lin, Napolitano, Richardson, Schiller, Serpe, Shinnick, Ruff, Waffenschmidt: File (2)

THE PORT AUTHORITY OF NY & NJ

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

AUDIT REPORT

REQUEST FOR

PERMIT TO OCCUPY OR USE

FINAL

To: Francis J. Lombardi, Chief Engineer
From: Frank De Martini
Date: April 12, 2001
Subject: **SILVERSTEIN PROPERTIES**
TAA # 987134

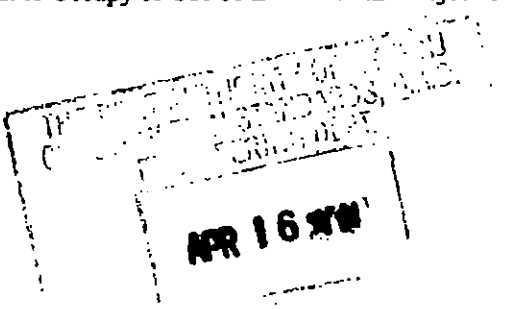
COPY TO: S. Bhol, F. De Martini, A. Fadavi, G. Gaeta, M. Hanna, T. Koebel, R. Lynch, L. Menno, A. Serpe

Based on the statement of substantial completion issued by Architect or Engineer or Record and Audits made from time to time by the World Trade Construction Division, it has been determined that construction standards, methods and techniques employed for the following TAA were adequate.

LOCATION:	7 WORLD TRADE CENTER
FACILITY:	THE WORLD TRADE CENTER
TAA No.:	987134
TENANT:	SILVERSTEIN PROPERTIES
CONTRACTOR:	AMBASSADOR CONSTRUCTION CO.
DATE OF INSPECTION:	MARCH 12, 2001
DESCRIPTION OF WORK:	BUILDOUT OF MAYOR'S OFFICE OF EMERGENCY RESPONSE

All open items have been resolved and no other audit deficiencies were noted or bought to my attention, which remain unresolved. Subsequently, it is requested that a Permit to Occupy or Use be issued for the subject Tenant Construction or Alteration Application.

Frank De Martini, R.A.
Manager
WTC Construction & Project Management
World Trade Department



Att.

295 Lafayette Street, New York, New York 10012
212 226 9696, Fax 212 219 0059

"REQUEST FOR PERMIT TO OCCUPY"

February 28, 2001

Mr. Robert T. Rafferty
Port Authority of NY & NJ
One World Trade Center –35th Floor
New York, New York 10048

Re: THE WORLD TRADE CENTER - The Office of Emergency Management
(Tenant Name)

1ST, 7TH, 23rd & 7th. TAA No. 987134
(Building) (Floor)
OFFICE SPACE

SUBJECT: REQUEST FOR PERMIT TO OCCUPY

Dear Mr. Rafferty:

I George G. Alexander of Swanke Hayden Connell & Partners, LLP, the Architect / whose seal and signature appear on the Tenant Alteration Review Request, certify and declare that:

"The construction work has been satisfactorily completed for occupancy in accordance with the approved plans and specifications and all Jurisdictional Building Codes."

"Also, I am not associated or affiliated with the contractor performing this work."

Sincerely,

REGISTERED ARCHITECT
GEORGE G. ALEXANDER
012205
STATE OF NEW YORK

(Signature) (SEAL)

W:\5576\REQUEST FOR PERMIT 01 02 28 DOC

THE PORT AUTHORITY OF NY & NJ *MEMORANDUM*

01 APR 2 A8:49

TO: Gerard Gaeta, Manager, Tenant Project Management, WTC
FROM: Robert Ruff, Jr.
DATE: March 27, 2001
SUBJECT: **WTC – TAA 987134 – FINAL INSPECTION – MAYOR'S OFFICE OF EMERGENCY MANAGEMENT – SILVERSTEIN PROPERTIES – 7 WTC**

COPY: N. Chanfrau, G. Cummiskey, A. Fadavi, J. Gertler, M. Hanna, M. Hurley, D. Karpiloff, J. Keane, T. Koebel, L. Menno, D. Warren

Fire Protection staff participated in the inspection of the subject TAA held on March 12, 2001, and had no comments.

All comments from previous inspections have been completed.

Fire Protection concerns have been satisfactorily resolved.

Inspections are conducted for general compliance with applicable codes, standards, and policies and do not imply that every deficiency was identified. The information provided shall not be construed as acceptance of non-compliant construction or systems unless specifically acknowledged in this memo.

If you have any questions, please contact me at 11-2813 or (201) 216-2813.

Robert Ruff, Jr.
Supervisor, Fire Protection
Risk Management

AVW/wh

INSPECTION PUNCH LIST
THE WORLD TRADE CENTER - TAA # 987134
MAYOR'S OFFICE- 7 WTC/1ST FLOOR
DRAWINGS APPROVAL - SUBMISSION # 10 ON 9/14/99

The following were in attendance:

The Port Authority	Ambassador	SHCA
J. Gertler	M. Schneider	P. Mejia
P. Ortiz		
J. Goon		
T. Savas		
A. Vanwinkle		
F. Dalton		
D. Schiller		

SUBMISSIONS BY THE ARCHITECT/ENGINEER OF RECORD - M. Hanna/P. Ortiz

- Submit a signed and sealed certification from the Architect/Engineer of Record, that the construction work has been satisfactorily completed for occupancy in accordance with all approved plans and specifications and all Jurisdictional Building Codes. A.O. 3-12-01
- Provide copies of all Controlled Inspection Reports listed on the drawings. A.O. 3-12-01
- Submit a set of "as-built reproducible mylar drawings, signed and sealed by the Consultant of Record and a set of CAD disks to Joseph Napolitano at The Port Authority of New York and New Jersey, One World Trade Center, 88 South, New York, New York 10048. A.O. 3-12-01

ARCHITECUTRAL/STRUCTURAL – P. Ortiz

A1 Provide permanent Connected Reserve of Charged Cylinders equal to the primary supply. A.O. 3-12-01

A2 Provide proper firestopping procedures along the ceiling level above the Storage Tank. The Thermal Fiber must be sealed with an approved firestopping material. A.O. 3-12-01

A3 Provide means of egress from the Tank Area in case of accidental tarp of the fire alarm system. A.O. 3-12-01

Final w/comments 7/26/00

ARCHITECUTRAL/STRUCTURAL - Continued

A4 ~~Provide data on Tank Design/doubled walled high level tank alarm.~~ P.O. 3-12-01

A5 ~~Provide label on the tank to identify contents.~~ P.O. 3-12-01

A6 ~~Provide confidential space entry procedure in accordance with applicable regulations.~~ P.O. 3-12-01

Electrical – J. Goon

E1 ~~Provide approved signs/warning and exit signs.~~ JG 3/12/01

E2 ~~Complete testing and verification of the fire alarm system with 7 World Trade Center~~ Fire Command Center. 3/12/01

E3 ~~Complete testing of the Emergency Lighting and Audio Warning Systems.~~ JG 3/12/01

E4 ~~Verify with the Architect why the Fire Alarm panel is not explosion proof in air area.~~ JG 3/12/01

E5 ~~Complete testing of the hatch door upon activation of the fire alarm system.~~ JG 3/12/01

Mechanical – T. Savas

M1 ~~Complete testing of the Purge System.~~

M2 ~~Complete testing of the fire damper.~~ P.O. 3-12-01

M3 ~~Provide construction test results for the tank (hydrostatic testing, etc.)~~ P.O. 3-12-01

M4 ~~Complete printing fire suppression piping and tank and provide proper arial placards for~~ Storage Tanks. P.O. 3-12-01

Final w/comments 7/26/00

SWANKE HAYDEN CONNELL ARCHITECTS

295 Lafayette Street, New York, New York 10012
212 226 9696, Fax 212 219 0059

"CONTROLLED INSPECTIONS"

April 4, 2001

Re: THE WORLD TRADE CENTER - The Office of Emergency Management
(Tenant Name)

1ST, 7TH, 23rd & 7th. TAA No. 987134
(Building) (Floor)

I George G. Alexander of Swanke Hayden Connell & Partners, LLP, the Architect whose seal and signature appear on the Tenant Alteration Review Request, certify and declare that I have reviewed all controlled inspection reports performed by the contractor and Consultants; (attached) and found this to represent all the controlled inspections required by under TAA No. 987134 as listed below:

- FIRE STOPS
- MECHANICAL
- WELDING
- SPRAY ON FIREPROOFING
- FIRE ALARM TEST
- TANK PRESSURE TEST
- CONCRETE DESIGN MIX
- SPRINKLER TEST
- GENERATOR TEST

I found all the above to include but not limited to all controlled inspections required for this alteration, and find all to be satisfactorily completed for occupancy in accordance with the approved plans, specifications and all jurisdictional building codes.

"Also, I am not associated or affiliated with the contractor performing this work."

Sincerely,

(Signature)

REGISTERED ARCHITECT
GEORGE G. ALEXANDER
012205
STATE OF NEW YORK

SWANKE HAYDEN CONNELL ARCHITECTS

295 Lafayette Street, New York, New York 10012
212 226 9696, Fax 212 219 0059

"CONTROLLED INSPECTION"

April 4, 2001

Mr. Robert T. Rafferty
Port Authority of NY & NJ
One World Trade Center –35th Floor
New York, New York 10048

Re: THE WORLD TRADE CENTER - The Office of Emergency Management
(Tenant Name)

1ST, 7TH, 23rd & 7th. TAA No. 987134
(Building) (Floor)
OFFICE SPACE

SUBJECT: "FIRE STOPPING INSPECTION"

Dear Mr. Rafferty:

This letter is to confirm that we have performed the final inspection of the fire stopping at the above mentioned floors and have found it to be in accordance with the contract documents.

Sincerely,

REGISTERED ARCHITECT
GEORGE G. ALEXANDER
STATE OF NEW YORK

(Signature) (SEAL)

Two Pennsylvania Plaza
New York, NY 10121

Telephone
615.3600

Fax
212.615.3700

Internet Address
http://www.cosentini.com

Cosentini
ASSOCIATES

Cosentini Associates
Consulting Engineers

M. A. Mass, PE
D. Mozur, PE
R.P. Leber, PE
D.C. Mass, PE
J. Michaeli, PE
S.A. Quart, PE
M. W. Maybaum, PE

E. Barbieri, PE
I. Bienstock, PE
R. Leber, PE
E.J. Martinez, PE
J. Oskwarek, PE
M. A. Schloss, PE

April 4, 2001

Mr. Juan Mejia
Swanke Hayden Connell Associates
295 Lafayette Street
New York, NY 10012

Re: Mayor's Office of Emergency Management
Fuel Oil Transfer System
Our Job No. 1854

Dear Juan:

The following is to confirm that we have performed final inspection of the fire protection systems for the 1st, 7th, and 23rd floors including Inergen system and found systems been installed in accordance with the contract documents.

Very truly yours,

COSENTINI ASSOCIATES

Michael W. Maybaum, P.E.

STATE OF NEW YORK
MICHAEL W. MAYBAUM
No. 059857 P.E.
LICENSED PROFESSIONAL ENGINEER

cc: Mr. Val Lemeshev, CA
Mr. Mike Reese, CA
Mr. Richard Drazal, CA

X:\WP\FILES\1854.01\MMTM0404.L01.doc

Two Pennsylvania Plaza
New York, NY 10121

Telephone
212.615.3600

Fax
212.615.3700

Internet Address
http://www.cosentini.com

Cosentini
ASSOCIATES

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E.J. Martinez, PE
J. Oskwarek, PE
M. A. Schloss, PE

April 4, 2001

Mr. Juan Mejia
Swanke Hayden Connell Associates
295 Lafayette Street
New York, NY 10012

Re: Mayor's Office of Emergency Management
Fuel Oil Transfer System
Our Job No. 1854

Dear Juan:

This letter is to confirm that we have performed the final inspection of the emergency generator system including fuel oil storage tank, transfer pumps, day tank and transfer switches and found no deficiency against Cosentini Associates contract documents.

Very truly yours,

COSENTINI ASSOCIATES

Michael W. Maybaum, P.E.

cc: Mr. Val Lemeshev, CA
Mr. Mike Reese, CA
Mr. Richard Drazal, CA

X:\WP\FILES\1854.01\MMTM0404.L02.doc

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY
OFFICE OF THE CHIEF ENGINEER
ONE WORLD TRADE CENTER
NEW YORK, N.Y. 10048

TO: R. DiChiara, Assistant Director, World Trade Department

PERMIT TO OCCUPY OR USE
OF
TAA No. W-947176.02
U. S. Secret Service
7 WTC - 9th and 10th Floors
General Construction

Based upon the Statement of Completion issued by T. J. O'Connor, Manager, World Trade Construction, under date of November 25, 1996, which states that the work performed by Ambassador Construction for TAA No. W-947176.02, U. S. Secret Service - 7 WTC - 9th and 10th Floors - General Construction at World Trade Center has been substantially completed, in accordance with the approved Drawings and Specifications and requirements of the Port Authority, so as to permit occupancy or use on December 16, 1996, and the fact that audit of field construction and/or field records made by the Engineering Department during the progress of work under TAA No. W-947176.02 have not, to the best of my knowledge and belief, disclosed any evidence that the requirements of the approved Drawings and Specifications and requirements of the Port Authority have not been met, I hereby issue a Permit to Occupy or Use.

Francis J. Lombardi, P.E.
Chief Engineer

Dated: December 16, 1996
New York, N.Y.

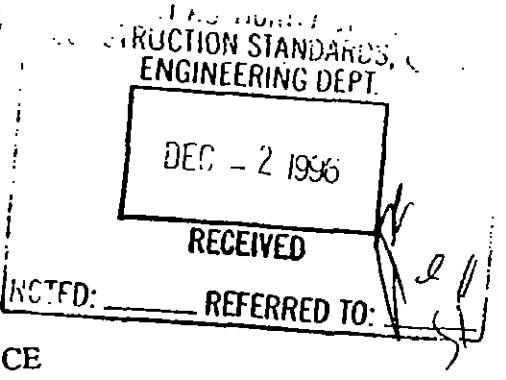
cc: Benacchio, Cancelliere, Chapin, Finnegan, Ginex, O'Connor, Panebianco, Ramabhushanam, Warren: File (2)

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

AUDIT REPORT

REQUEST FOR PERMIT TO OCCUPY OR USE

FINAL



TO: Francis J. Lombardi, Chief Engineer
FROM: Thomas J. O'Connor
DATE: November 25, 1996
SUBJECT: THE WORLD TRADE CENTER - SECRET SERVICE
#7 WTC - 9TH & 10TH FLOORS - TAA #947176.02

COPY TO: I. Baron, R. Benacchio, P. Cooper, R. DiChiara, D. Warren

Based on the statement of substantial completion issued by the Architect or Engineer of Record and audits made from time to time by the World Trade Construction Division, it has been determined that construction standards, methods and techniques employed for the following TAA were adequate.

Location:	Seven World Trade Center - 9th & 10th Floors
Facility:	The World Trade Center
TAA No.:	947176.02
Tenant:	Secret Service
Contractor:	Ambassador Construction
Date of Inspection:	December 29, 1994
Description of Work:	General Construction
Follow-Up Date:	March 17, 1995

No unresolved audit deficiencies were noted or brought to our attention. Subsequently, it is requested that a Permit to Occupy or Use be issued for the subject TAA.

Thomas J. O'Connor, P.E.
Manager
World Trade Construction

Attachments:

- Report on Audit Conformance (11/25/96)
- TCRU Approval (12/29/94)
- A/E Certification (1/23/95)
- Risk Management Concurrence (11/14/96)

JERRY HERMAN, A.I.A. • 135 EASTERN PARKWAY • BROOKLYN, N.Y. 11238 • (718) 789-2581

TO: Port Authority of NY & NJ
1 WTC - 35th Floor
New York, NY 10048
Attention: J. Panebianco

DATE: 23 January 1995

RE: The World Trade Center - United States Secret Service (Tenant Name) - 7 WTC (Building) - 9 & pt 10 (Floor)

Contract No. 947.176 TAA No. # 947176.02 New ~~Store~~/Office Space

SUBJECT: CONSTRUCTION WORK

I, Jerry Herman, the Architect whose seal and signature appear on the Tenant Alteration Review Request, certify and declare that:

To the best of my knowledge, all construction work has been satisfactorily completed in accordance with all approved plans, specifications and applicable building codes.

Jerry Herman, A.I.A.

Jerry Herman

REGISTERED ARCHITECT
JERRY HERMAN
012257
STATE OF NEW YORK

Cert/Occ50.012395 1/23/95

THA W A
12

27

THE PORT AUTHORITY OF NY AND NJ — Memorandum

TO: Thomas O'Connor, Manager, WTC Construction
FROM: David Warren
DATE: December 2, 1996
SUBJECT: WTC - FINAL INSPECTION - TAA 947176.02 - 7WTC 9TH & 10TH FLOORS - FOLLOW UP INSPECTION

COPY TO: H. Banks, T. Baron, N. Chanfrau, G. Cummiskey, R. Earle, M. Hurley, E. Monteverde, E. Petrick

Risk Management Fire Protection staff conducted a follow up inspection for the above subject on November 14, 1996, and concludes that previous inspection comments have been resolved.

Fire protection concerns have been satisfactorily completed.

If you have any questions, please contact me at 201-216-2815.

David Warren, Supervisor
Fire Protection
Risk Management

WJO/am

STANDARDS
ENGINEERING DEPT.
DEC - 6 1996
RECEIVED

12/10/96 OK TO W947176.02 FILE

(6)

INSPECTION PUNCH LIST
THE WORLD TRADE CENTER
TAA 947176-02
SECRET SERVICE - 7 WTC - 9TH AND 10TH FLOORS
FINAL INSPECTION - DECEMBER 29, 1994

The following were in attendance:

The Port Authority

R. Chapin
F. Dalton
W. Dougherty
G. Drohan
J. Hartigan
R. Levine
F. Ludwiczak

Ambassador Constr. Co.

K. Novobilski

G.C. Eng Engineering

J. Castaneda
A. Ho

Silverstein Properties

M. Lee

R. B. Samuels

A. Gille

Fire Service

J. Tuimil

The following list of the incomplete punch list items was given the General Contractor, Ambassador Construction, on December 29, 1994.

ARCHITECTURAL - Frank Ludwiczak

A1. Submit a certification from the Architect of Record, that the construction work has been satisfactorily completed for occupancy in accordance with all approved plans and specifications and all Jurisdictional Building Codes. (The attached letter from the Architect, dated December 19, 1994, does not cover all punch list work done since that date.) Letter, dated 12/19/94

A2. Submit a set of "as-built" reproducible mylar drawings, signed and sealed by the Architect of Record. Submitted 3/17/95

A3. Satisfy all future field comments for any pending drawing revisions currently under review by the Port Authority. OUT

A4. Provide copies of all controlled inspections witnessed by the Architect of Record. Letter, dated 12/16/94

A5. Submit a certification from the Architect of Record that material and finishes installed are those specified by his office and approved by the Port Authority. Covered in #A-1

ATTACH 6A
TAA W947176.02
12/4 & 12/10

20

A6. Architect to respond to punch list item #13 in memo from R. Earle to T. O'Connor (12/20/94); reason for using polyurethane foam to seal pipe penetrations through slab at the 10th floor above ceiling of the classroom (see attached). Letter 2/10/95

ELECTRICAL - John Hartigan & Pat Affuso

E1. Install additional strobe light in new classroom/conference room on 10th floor on opposite side from new modern fold doors. NEC.

E2. Architect/Engineer to investigate the need for strobes in North and South corridors on 10th floor. Design Issue

MECHANICAL - Gerry Drohan

M1. Submit Air Balance Report. M.O. 11/22/96.

see ATT.
P.L. FROM
RISK d/d 12/20/94

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

M E M O R A N D U M

TO: Robert Benacchio, Project Manager, Tenant Services, World Trade Department
FROM: Irwin Baron
DATE: January 16, 1996
SUBJECT: WTC - TAA NO. W-937233 - AMERICAN EXPRESS - 7 WTC 7TH AND 8TH FLOORS - OFFICE CONSTRUCTION

COPY TO: P. Cooper, A. Fadavi, F. Lombardi, F. Napoliello, T. O'Connor, J. Panebianco, E. Ramabhushanam, O. Tang, D. Warren, File (2)

Reference is made to your memo dated September 22, 1995, to the Chief Engineer requesting a Permit to Occupy or Use for the subject TAA.

Based on CSQA's audits conducted to date, the following items were noted:

- The open items of work noted in Mr. Panebianco's memo to you (see attached), dated September 27, 1995, have not yet been completed. Also, as noted in the memo, a re-inspection will be required upon completion of all work.

- Risk Management's written concurrence has not yet been issued.

Therefore, based on the above, a Permit to Occupy or Use cannot be processed at this time. A renewed request for the Permit will be required when the above items have been completed.

Irwin Baron

Irwin Baron, P.E.
Engineer of Projects
Quality Assurance Division

Attachment

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

MEMORANDUM

TO: R. Benacchio
FROM: J. Panebianco
DATE: September 27, 1995

SUBJECT: THE WORLD TRADE CENTER - TAA #937233
AMERICAN EXPRESS - 7 WTC/7TH & 8TH FLOORS
FINAL INSPECTION

COPY TO: I. Baron, P. Cooper, A. Fadavi, E. Monteverde, T. O'Connor, M. Young, File
(All w/attachment)

A review of this TAA indicates the tenant has not completed any of the open items listed in Mr. O'Connor's letter dated September 22, 1994, copy attached.

A reinspection will be required to determine if the following items have been corrected.

E1. In all electric closets, install panel trim, covers, directories and identify all disconnect switches.

E2. Install ground fault interrupters on all power receptacles that are within six (6) feet of sinks in pantry area.

Further, the emergency generator fuel supply system has not been installed.

Your assistance in closing out this TAA will be appreciated.

J. Panebianco

Joseph Panebianco, P.E.
Supervising Engineer
World Trade Construction

JP:nc

Attachment

THE PORT AUTHORITY OF N.Y. & N.J.
CONSTRUCTION STANDARDS,
ENGINEERING DEPT.
OCT - 2 1995
RECEIVED
NOTED: _____ REFERRED TO: _____

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY

AUDIT REPORT

REQUEST FOR
PERMIT TO OCCUPY OR USE - TENANT

FINAL

To: Mr. Frank Lombardi, Acting Director of Engineering and Chief Engineer
From: Thomas J. O'Connor
Date: September 1, 1995

Subject:
Facility: The World Trade Center
Location: Seven World Trade Center - 7th & 8th Floors
TAA No.: 937233
Tenant: American Express
Contractor: Herbert Construction
Date of Inspection: September 2, 1994

Copy To: I. Baron, R. Benacchio, P. Cooper, R. Cronin, R. DiChiara, R. Levine, J. Panebianco, G. Rossi, File

Based on the certifications issued by the Architect or Engineer of Record and audits made from time to time, it has been determined that construction standards, methods and techniques employed were adequate. Since time is of the essence, please issue a "Temporary Permit To Occupy".

Thomas J. O'Connor, P.E.
Manager
World Trade Construction

TJOC:nc

Attachment

Consler and Associates
Architects

RECEIVED

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THE WORLD TRADE CENTER

Yee Leung AIA
Vice President

January 28, 1994

Mr. J. Panebianco
PORT AUTHORITY OF NY & NJ
1 World Trade Center - 35th Floor
New York, NY 10048

Denver
Houston
New York
Los Angeles
San Francisco
Washington, D.C.

RE: Office Spaces For:
American Express Bank
7 World Trade Center, 7th & 8th Floors

Dear Mr. Panebianco,

In reference to Contract No. 937.233, TAA No. 937233 for the above, being the Architect signed and sealed on the Tenant Alteration Review Request, I certify and declare that:

The construction work has been satisfactorily completed for occupancy in accordance with the approved plans and specifications and all Jurisdictional Building Codes.

I, therefore, apply for the issuance of the Certification of Occupancy. Also, I am not associated or affiliated with the contractor performing this work.

Sincerely,

Yee Leung
Vice President, AIA

REGISTERED ARCHITECT
YEE LEUNG
No. 15214
STATE OF NEW YORK

QUALITY ASSURANCE
10: A.F.

One Rockefeller Plaza
Suite 509
New York, New York 10020
212/581-9600

212 435 8555 P.03/03
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PANYNJ
drawer 36
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Box 2/6